Pergamon

Environment International, Vol. 20, No. 6, pp. 761–770, 1994
Copyright © 1994 Elsevier Science Ltd
Printed in the USA. All rights reserved
0160-4120/94 $6.00 + .00

# ENVIRONMENT INTERNATIONAL

CONTENTS

Volume 20 Number 1 1994

## *SPECIAL ISSUE*
## THE FOURTH NORDIC SYMPOSIUM ON HUMIC SUBSTANCES


| | | |
|---|---|---|
| **Georg Becher**<br>**Egil T. Gjessing**<br>**A. Alan Moghissi** | 1 | Editorial: Humic substances |
| **N. Senesi**<br>**F. Sakellariadou** | 3 | Structural and functional chemical properties of marine and coastal sedimentary humic acids |
| **Kevin Bishop**<br>**Catharina Pettersson**<br>**Bert Allard**<br>**Ying-Hua Lee** | 11 | Identification of the riparian sources of aquatic dissolved organic carbon |
| **U.S. Lundström** | 21 | Significance of organic acids for weathering and the podzolization process |
| **Georg Guggenberger** | 31 | Acidification effects on dissolved organic matter mobility in spruce forest ecosystems |
| **L. Hargitai** | 43 | Biochemical transformation of humic substances during humification related to their environmental functions |
| **U. Münster** | 49 | Studies on phosphatase activities in humic lakes |
| **Vivi-Ann Långvik**<br>**Nina Åkerback**<br>**Bjarne Holmbom** | 61 | Characterization of aromatic structures in humic and fulvic acids |
| **Dag O. Hessen**<br>**Karl Nygaard**<br>**Kalevi Salonen**<br>**Ansii Vähätalo** | 67 | The effect of substrate stoichiometry on microbial activity and carbon degradation in humic lakes |
| **Ragnar Österberg**<br>**Lech Szajdak**<br>**Kell Mortensen** | 77 | Temperature-dependent restructuring of fractal humic acids: a proton-dependent process |
| **Stefan Andersson**<br>**Inger Valeur**<br>**Ingvar Nilsson** | 81 | Influence of lime on soil respiration, leaching of DOC, and C/S relationships in the mor humus of a haplic podsol |
| **James H. Ephraim**<br>**Bert Allard** | 89 | Copper binding by an aquatic fulvic acid: heterogeneity considerations |
| **B. Allard**<br>**H. Borén**<br>**C. Pettersson**<br>**G. Zhang** | 97 | Degradation of humic substances by UV irradiation |

| | | |
|---|---|---|
| **C. Johansson<br>I. Pavasars<br>H. Borén<br>A. Grimvall<br>O. Dahlman<br>R. Mörck<br>A. Reimann** | 103 | A degradation procedure for determination of halogenated structural elements in organic matter from marine sediments |
| **Peter Backlund** | 113 | Destruction of natural mutagen and trihalomethane precursors in water by ozonation, UV-irradiation, and photolytic ozonation |
| **James H. Ephraim<br>Gyula Szabo<br>Robert A. Bulman** | 121 | Potentiometric titrations of chemically immobilised humic acid and salicylic acid and their uptake of Eu(III) as a function of pH and ionic strength |
| **Pia Lassen<br>Lars Carlsen<br>Peter Warwick<br>Amanda Randall<br>Rui Zhao** | 127 | Radioactive labelling and characterisation of humic materials |
| | 135 | Books |
| | 137 | Erratum |
| | I | New Patents |


# ENVIRONMENT INTERNATIONAL

**CONTENTS** **Volume 20 Number 2 1994**


| | | |
|---|---|---|
| **A. Alan Moghissi** | 139 | Editorial: Recycling and environmental protection |
| **John C. Baird<br>Birgitta Berglund<br>Hassan Shams Esfandabad** | 141 | Longitudinal assessment of sensory reactions in eyes and upper airways of staff in a sick building |
| **Rong-Hwa Lin<br>Chrong-Reen Wang<br>Chih-Shan Li** | 161 | Size distributions and lung deposition of submicrometer particles from metered dose inhalers |
| **L.Y. Chan<br>W.T. Hung<br>Y. Qin** | 169 | Vehicular emission exposure of bicycle commuters in the urban area of Guangzhou, South China (PRC) |
| **Chih-Shan Li<br>Yu-Mei Kuo<br>Li-Yuan Hsu** | 179 | Significance of concentration variations of microbial aerosols within domestic dwellings |
| **Kiyoung Lee<br>Yukio Yanagisawa<br>John D. Spengler** | 191 | Reduction of air pollutant concentrations in an indoor ice-skating rink |

| | | |
|---|---|---|
| **David L. MacIntosh**<br>**Dee A. Hull**<br>**Howard S. Brightman**<br>**Yukio Yanagisawa**<br>**P. Barry Ryan** | 201 | A method for determining in-use efficiency of Stage II vapor recovery systems |
| **A. Gerhardt**<br>**E. Svensson**<br>**M. Clostermann**<br>**B. Fridlund** | 209 | Monitoring of behavioral patterns of aquatic organisms with an impedance conversion technique |
| **Sami N. Al-Yakoob**<br>**Talat Saeed**<br>**Huda Al-Hashash** | 221 | Polycyclic aromatic hydrocarbons in fish: exposure assessment for Kuwaiti consumers after the Gulf oil spill of 1991 |
| **Julio A. Camargo** | 229 | The importance of biological monitoring for the ecological risk assessment of freshwater pollution: A case study |
| **Jan Sundell**<br>**Thomas Lindvall**<br>**Berndt Stenberg** | 239 | Associations between type of ventilation and air flow rates in office buildings and the risk of SBS-symptoms among occupants |
| **Marvin Kirshner**<br>**Kevin Bleach** | 253 | Environmental and occupational remidiation subsequent to the World Trade Center bombing |
| | 263 | Books |



# ENVIRONMENT INTERNATIONAL

**CONTENTS** **Volume 20 Number 3 1994**


## *SPECIAL ISSUE*
## ON THE HUMEX PROJECT AND HUMIC SUBSTANCES


| | | |
|---|---|---|
| **Egil T. Gjessing**<br>**Georg Becher**<br>**A. Alan Moghissi** | 265 | Editorial: Humic Substances and the HUMEX Project |
| **Egil T. Gjessing** | 267 | HUMEX (humic lake acidification experiment): chemistry, hydrology, and meteorology |
| **Rolf D. Vogt**<br>**Sissel B. Ranneklev**<br>**Tone C. Mykkelbost** | 277 | The impact of acid treatment on soilwater chemistry at the HUMEX site |
| **Gunnhild Riise**<br>**Brit Salbu**<br>**Rolf D. Vogt**<br>**Sissel B. Ranneklev**<br>**Tone C. Mykkelbost** | 287 | Mobility of humic substances, major and minor elements in Lake Skjervatjern and its catchment area |
| **Ronald L. Malcolm**<br>**Thomas Hayes** | 299 | Organic solute changes with acidification in Lake Skjervatjern as shown by $^{1}$H-NMR spectroscopy |

| | | |
|---|---|---|
| **K. Salonen**<br>**A. Vähätalo** | 307 | Photochemical mineralisation of dissolved organic matter in Lake Skjervatjern |
| **Pål Brettum** | 313 | Acidification of the humic Lake Skjervatjern; effects on the volume and species composition of phytoplankton |
| **E.-A. Lindstrøm** | 321 | Periphyton investigations in HUMEX Lake Skjervatjern in 1992 |
| **Tor Erik Brandrud**<br>**Stein W. Johansen** | 329 | Effects of acidification on macrophyte growth in the HUMEX Lake Skjervatjern, with special emphasis on *Sphagnum auriculatum* |
| **Anders Hargeby**<br>**Pia Stålhandske**<br>**Marie Svensson**<br>**Anders Kullberg**<br>**Robert C. Petersen Jr.** | 343 | Abundance, size distribution, and predation efficiency of damselfly larvae (Zygoptera) in the HUMEX Lake Skjervatjern 1989-1992 |
| **Leif Lien** | 349 | Brown trout exposed to acid-treated and nontreated humic water from Lake Skjervatjern |
| **Geir Taugbøl**<br>**Hans Martin Seip** | 353 | Study of interaction of DOC with aluminum and hydrogen ion in soil- and surface water using a simple equilibrium model |
| **Egil T. Gjessing** | 363 | The role of humic substances in the acidification response of soil and water—results of the humic lake acidification experiment (HUMEX) |
| **Tuija Rolla**<br>**Pirkko Kortelainen**<br>**Mark B. David**<br>**Irma Mäkinen** | 369 | Effect of organic anions on acid neutralizing capacity in surface waters |
| **Fritz H. Frimmel** | 373 | Photochemical aspects related to humic substances |
| **O.A. Trubetskoj**<br>**O.E. Trubetskaya**<br>**L.F. Markova**<br>**T.A. Muranova** | 387 | Comparison of amino-acid compositions and $E_4/E_6$ ratios of soil and water humic substances fractions obtained by polyacrylamide gel electrophoresis |
| **J. Pempkowiak**<br>**J. Kozuch**<br>**T. Southon** | 391 | The influence of structural features of marine humic substances on the accumulation rates of cadmium by a blue mussel *Mytilus edulis* |
| **G. Abbt-Braun**<br>**K. Johannsen**<br>**M. Kleiser**<br>**F.H. Frimmel** | 397 | Adsorption behaviour of humic substances on activated carbon: comparison with the physical and chemical character of material from different origin |
| **L.T. Shirshova**<br>**T.E. Khomutova** | 405 | The response of humic substances to soil acidification and freezing |
| **Maryam Alborzfar**<br>**Christian Grøn**<br>**Gunnar Jonsson** | 411 | Ultrafiltration in producing drinking water from humic ground waters |

| | | |
|---|---|---|
| **A. Benedetti**<br>**F. Alianiello**<br>**S. Dell'Orco**<br>**S. Canali** | 419 | A comparative characterization of organic matter in agrarian and forest soils from Italy |
| | 425 | Books |


# ENVIRONMENT INTERNATIONAL

**CONTENTS** **Volume 20 Number 4 1994**


| | | |
|---|---|---|
| **A. Alan Moghissi** | 427 | Editorial: Tobacco industry |
| **Bert W. Rust**<br>**Frank J. Crosby** | 429 | Further studies on the modulation of fossil fuel production by global temperature variations |
| **Hong Zhou**<br>**Ming Rao**<br>**Karl T. Chuang** | 457 | Intelligent system for indoor air quality control |
| **Wolfgang Babisch**<br>**Hartmut Ising**<br>**Barbara Kruppa**<br>**Daniel Wiens** | 469 | The incidence of myocardial infarction and its relation to road traffic noise—the Berlin case-control studies |
| **Larry R. Glass**<br>**Clay E. Easterly** | 475 | Evaluating the tumorigenic potency of polynuclear aromatic hydrocarbons |
| **Ismail M. Madany**<br>**M. Salim Akhter**<br>**O.A. Al Jowder** | 483 | The correlations between heavy metals in residential indoor dust and outdoor street dust in Bahrain |
| **Ming-Yen Wey** | 493 | The simulation of flue gas scrubbing |
| **Ronald J. Gibbs** | 507 | Metals in the sediments along the Hudson River estuary |
| **Jose M. Azcue**<br>**Jerome O. Nriagu**<br>**Sherry Schiff** | 517 | Role of sediment porewater in the cycling of arsenic in a mine-polluted lake |
| **Chungsying Lu**<br>**Chi Mei Lee**<br>**Wei Ming Lu**<br>**Pei-Chung Chen** | 529 | A model of nitrogen removal in wastewaters using alginate-entrapped cyanobacteria *Anabaena* CH3 |

**Y.A. Al-Shayji**
**K. Puskas**
**R. Al-Daher**
**I.I. Esen** 541 Production and separation of algae in a high-rate ponds system

551 Books

I New Patents

# ENVIRONMENT INTERNATIONAL

**CONTENTS** **Volume 20 Number 5 1994**

## *SPECIAL ISSUE*
## JOHN H. HARLEY (1916–1993)

**Naomi H. Harley** 555 Editorial: John H. Harley (1916–1993)

**A. Alan Moghissi**
**Melvin W. Carter**
**James E. McLaughlin** 557 Tributes to John H. Harley (1916–1993)

**Merril Eisenbud** 561 The first years of the Atomic Energy Commission New York Operations Office Health and Safety Laboratory

**John H. Harley**
**Evelyn S. Jetter**
**Norton Nelson** 573 Elimination of radon from the body

**L.D. Hamilton**
**S. Holtzman**
**A.F. Meinhold**
**S.C. Morris**
**R. Pardi**
**M.D. Rowe**
**C. Sun**
**L.R. Anspaugh**
**K.T. Bogen**
**J.I. Daniels**
**D.W. Layton**
**T.E. McKone**
**T. Straume**
**R. Andricevic**
**R.L. Jacobson** 585 Pilot study risk assessment for selected problems at three U.S. Department of Energy facilities

**Naomi H. Harley**
**Edith S. Robbins** 605 A biokinetic model for $^{222}Rn$ gas distribution and alpha dose in humans following ingestion

| | | |
|---|---|---|
| **Warren K. Sinclair** | 611 | Epidemiological studies and radiation protection: the potential value of a new study at U.S. nuclear power plants |
| **Herta Spencer**<br>**Stephen J. Sontag** | 619 | Occupational and environmental exposure to lead and Paget's disease of bone |
| **Isabel M. Fisenne** | 627 | Lead-210 in animal and human bone: a new analytical method |
| **Asker Aarkrog** | 633 | Past and recent trends in radioecology |
| **K. O'Brien**<br>**W. Friedberg** | 645 | Atmospheric cosmic rays at aircraft altitudes |
| **E.G. Létourneau**<br>**D.P. Meyerhof**<br>**B. Ahier** | 665 | A retrospective of fallout monitoring in Canada |
| **R. McNeely** | 675 | Long-term environmental monitoring of $^{14}C$ levels in the Ottawa region |
| **Fred A. Mettler, Jr.** | 681 | UNSCEAR, historical and current perspectives |
| **W.A. Mills**<br>**R.G. Thomas** | 685 | Commentaries |
| | I | New Patents |



# ENVIRONMENT INTERNATIONAL

**CONTENTS** **Volume 20 Number 6 1994**



| | | |
|---|---|---|
| **A. Alan Moghissi** | 691 | Editorial: Life expectancy as a measure of effectiveness of environmental protection |
| **Keith Phillips**<br>**David A. Howard**<br>**David Browne**<br>**J. Mark Lewsley** | 693 | Assessment of personal exposures to environmental tobacco smoke in British nonsmokers |
| **Espen Lydersen**<br>**Arne Henriksen** | 713 | Total organic carbon in streamwater from four long-term monitored catchments in Norway |
| **Risto Ruotsalainen**<br>**Niina Jaakkola**<br>**Jouni J.K. Jaakkola** | 731 | Ventilation rate as a determinant of symptoms and perceived odors among workers in daycare centers |

| | | |
|---|---|---|
| **Waleed K. Zubari**<br>**Ismail M. Madany**<br>**Sabah S. Al-Junaid** | 739 | Trends in the quality of groundwater in Bahrain with respect to salinity, 1941-1992 |
| **S. Salazar**<br>**C. Alvarez**<br>**H.A. Silva**<br>**C. Dorantes**<br>**M.I. Gaso**<br>**N. Segovia**<br>**I. Perez** | 747 | Radioactivity in air around nuclear facilities in Mexico |
| | 757 | Books |
| | 759 | Contents and Author Index for Volume 20, 1994 |